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The spider fauna of Russia and adjacent regions: a 2009 update

Фауна пауков России и прилежащих регионов: обновление 2009 года

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КЛЮЧЕВЫЕ СЛОВА: пауки, Россия, республики бывшего СССР, физико-географические области, фауна, каталог.

ABSTRACT. Recent (2009) calculations of the spider species richness in Russia, and in the former Soviet Union (FSU) republics, as well as in the main physiographical areas are provided as compared to earlier data. As of 31st December 2009, 3,249 spider species were reported from the FSU territories, including 2,297 species from Russia. Updated forecasts of the total spider faunas of the FSU and Russia are given.

РЕЗЮМЕ. В сравнении с данными предыдущих лет, на 2009-й год приведены подсчёты видового богатства пауков России и республик бывшего СССР. По состоянию на 31 декабря 2009 г. с территории бывшего СССР отмечено 3249 видов пауков, с территории России — 2297 видов. Даны обновленные прогнозы общего числа видов пауков в фаунах бывшего СССР и России.

The material presented below is a result of my own project started in 1981, aiming at compiling all available literature data, albeit with some criticism, concerning the spiders of Russia and other post-Soviet republics (former Soviet Union, FSU) since the 18th century. Publication of all material (like the famous “Catalogue of the Russian Spiders” by D.E. Kharitonov [Charitonov, 1932, 1936], comparable with or exceeding in size P. Bonnet’s “Bibliographia Araneorum”) currently is impossible, first of all due to purely technical reasons. Only a checklist of the spiders together with a bibliographical index covering all literature data as of July 2000 has hitherto been published [Mikhailov, 1997, 1998, 1999, 2000].

This paper updates Russia’s spider fauna as of 31st December 2009 and, more generally, reflects changes in the knowledge of FSU spiders. Earlier calculations have been published elsewhere [Mikhailov, 1992, 1997, 2002, 2011, etc.]. An updated bibliographical list is in preparation.

Until now, 3,249 spider species have been reported from the FSU territories (Tables 1, 2). Since the 2000 evaluation, the main increase in species composition is recorded in Linyphiidae (+106 species), followed by Gnaphosidae (+63), Lycosidae (+56), Theridiidae (+35), and Salticidae (+31). The increase in species number

Table 1. Species diversity of main spider families, FSU territory.
Таблица 1. Видовое разнообразие основных семейств пауков, территория бывшего СССР.

Family	**No. of species (percentage is given in brackets)**	
	2000	**2009**
Linyphiidae	873 (30.88)	979 (30.13)
Gnaphosidae	294 (10.40)	357 (10.99)
Salticidae	307 (13.19)	338 (10.40)
Lycosidae	263 (9.30)	319 (9.82)
Thomisidae	168 (5.94)	177 (5.45)
Theridiidae	132 (4.67)	167 (5.14)
Araneidae	113 (4.00)	128 (3.94)
Clubionidae	99 (3.50)	112 (3.45)
Philodromidae	74 (2.62)	92 (2.83)
Dysderidae	91 (3.22)	90 (2.77)
Agelenidae	54 (1.91)	80 (2.46)
Dictynidae	59 (2.09)	71 (2.19)
Tetragnathidae	43 (1,52)	40 (1.23)
Liocranidae (+*Phrurolithus*)	29 (1.03)	36 (1.11)
Zodariidae	23 (0.81)	26 (0.80)
Pholcidae	18 (0.64)	22 (0.68)
Hahniidae	17 (0.60)	21 (0.65)
Titanoecidae	19 (0.67)	20 (0.62)
Cybaeidae	6 (0.21)	15 (0.46)
Nesticidae	13 (0.46)	14 (0.43)
Nemesiidae	11 (0.39)	13 (0.40)
Pisauridae	12 (0.42)	12 (0.37)
Amaurobiidae	8 (0.28)	10 (0.31)
others	101	110
TOTAL	2,827	3,249

Table 2. Spider species composition in the FSU and post-Soviet republics, data for 1989, 1996, 2000, 2008, and 2009.
Таблица 2. Видовой состав фауны пауков всей территории и отдельных республик бывшего СССР, данные 1989, 1996, 2000, 2008 и 2009 гг.

Regions/Years	**1989**	**1996**	**2000**	**2008**	**2009**
Ex-USSR	2,184	2,694	2,827	3,213	3,249
Russia		1,874	1,974	2,260	2,297
Estonia		506	509	505	507
Latvia		401	402	414	415
Lithuania		241	271	385	392
Byelorus(sia)		383	412	418	421
Ukraine		808	830	936	958
Moldova		291	292	292	292
Georgia		326	456	463	467
Azerbaijan		500	559	642	644
Armenia		118	127	134	135
Kazakhstan		679	719	819	847
Uzbekistan		290	309	320	321
Turkmenistan		353	377	387	387
Kyrgyzstan		358	464	474	476
Tadjikistan		293	310	316	317

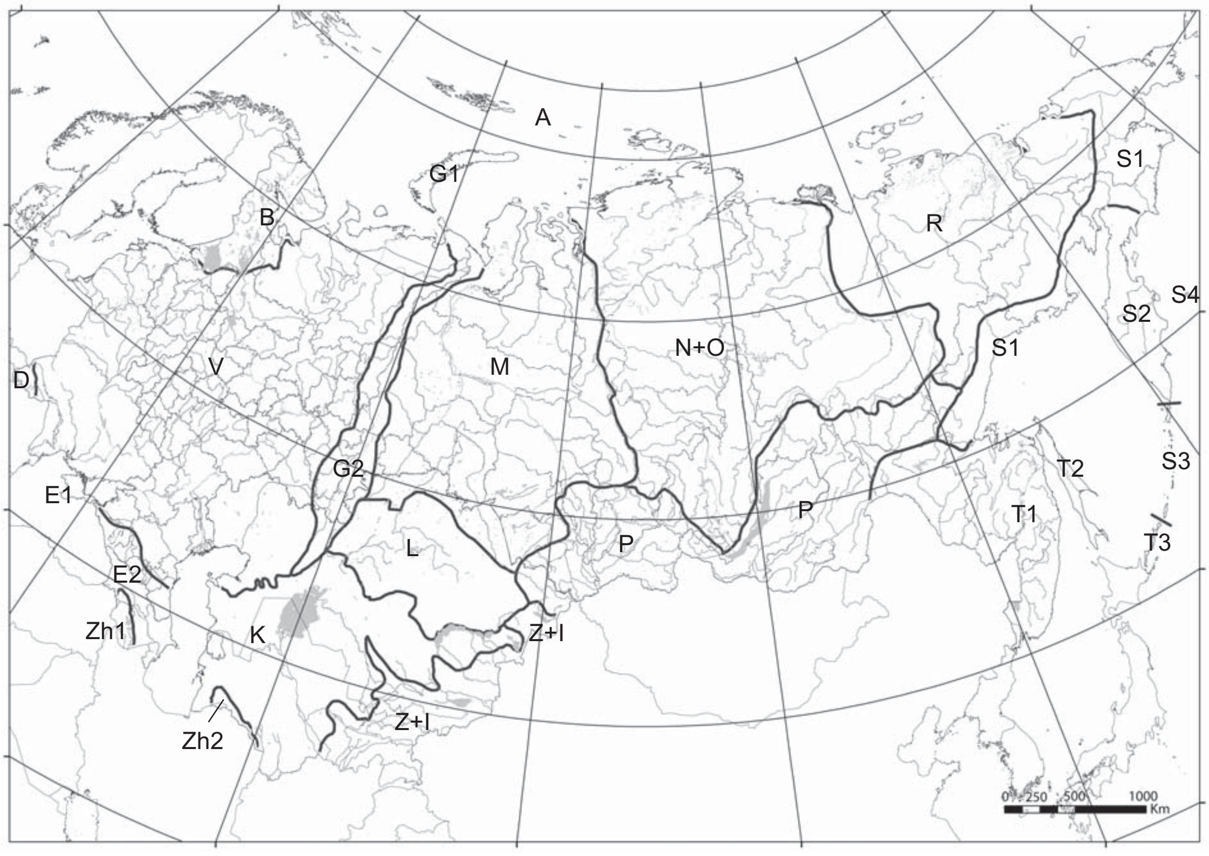


Fig. 1. Physiographical areas of the FSU (after Gvozdetsky [1968]). A — Atlantic-Arctic area, B (Б) — Fennoscandia, V (В) — Russian Plain, G1 (Г1) — Novaya Zemlya, G2 (Г2) — Urals, D (Д) — Carpathians, E1 — Crimea, E2 — Caucasus, Zh1 (Ж1) — Armenian Upland, Zh2 (Ж2) — Kopetdagh Mts., Z+I (З+И) — Mountains of Middle (= Central) Asia, K — Deserts of Middle (= Central) Asia, L (Л) — Kazakhstan hills, M — West Siberia, N+O (Н+О) — Middle Siberia, P (П) — Mountains of South Siberia, R (Р) — Northeastern Siberia, S1 (С1) — Continental Far North-East, S2 (С2) — Kamchatka, S3 (С3) — N-Kuriles, S4 (С4) — Commander Islands, T1 — Continental southern Far East, T2 — Sakhalin, T3 — S-Kuriles.

Рис. 1. Физико-географические области бывшего СССР (по: Гвоздецкий, 1968). A — Атлантико-Арктическая область, B (Б) — Фенноскандия, V (В) — Русская равнина, G1 (Г1) — Новая Земля, G2 (Г2) — Урал, D (Д) — Карпаты, E1 — Крым, E2 — Кавказ, Zh1 (Ж1) — Армянское нагорье, Zh2 (Ж2) — Копедаг, Z+I (З+И) — горы Средней Азии, K — пустыни Средней Азии, L (Л) — Казахстанский мелкосопочник, M — Западная Сибирь, N+O (Н+О) — Средняя Сибирь, P (П) — горы Южной Сибири, R (Р) — Северо-восточная Сибирь, S1 (С1) — континентальный Дальний Северо-Восток, S2 (С2) — Камчатка, S3 (С3) — Северные Курилы, S4 (С4) — Командорские о-ва, T1 — континентальный юг Дальнего Востока, T2 — Сахалин, T3 — Южные Курилы.

Table 3. Spider species composition in the FSU physiographical areas, data for 1989, 1996, 2000, 2008, and 2009.
Таблица 3. Видовой состав фауны пауков физико-географических областей бывшего СССР, данные 1989, 1996, 2000, 2008 и 2009 гг.

Regions/Years	1989	1996	2000	2008	2009
A	1	1	2	2	2
B	385	429	516	532	534
V	936	1,001	1,026	1,294	1,314
G1+G2	600				
G1		21	21	20	24
G2		683	750	786	790
D	435	421	428	459	485
E1	308	311	342	478	500
E2+Zh1	671				
E2		752	834	927	940
Zh1		127	135	228	231
Zh2		221	240	243	244
Z+I		773	833	878	880
K	291	318	338	352	360
L	103	129	143	160	160
M	243	440	554	602	652
N+O	532	624	634	667	666
P	436	813	912	1,002	1,015
R	277	395	397	408	408
S1+S2+S3+S4	278				
S1		411	415	446	451
S2		184	182	204	205
S3		54	60	81	81
S4		19	20	20	20
T1+T2+T3	375				
T1		507	566	797	843
T2		343	338	361	361
T3		144	149	165	166

Regions: A — Atlantic-Arctic area, B (Б) — Fennoscandia, V (В) — Russian Plain, G1 (Г1) — Novaya Zemlya, G2 (Г2) — Urals, D (Д) — Carpathians, E1 — Crimea, E2 — Caucasus, Zh1 (Ж1) — Armenian Upland, Zh2 (Ж2) — Kopetdagh Mts., Z+I (З+И) — Mountains of Middle (=Central) Asia, K — Deserts of Middle (=Central) Asia, L (Л) — Kazakhstan hills, M — West Siberia, N+O (Н+О) — Middle Siberia, P (П) — Mountains of South Siberia, R (Р) — Northeastern Siberia, S1 (С1) — Continental Far North-East, S2 (С2) — Kamchatka, S3 (С3) — N-Kuriles, S4 (С4) — Commander Islands, T1 — Continental southern Far East, T2 — Sakhalin, T3 — S-Kuriles.

was 510 during 1989–1995, i.e. approximately 73 species annually. In 1996–2000, these values were 130 and 33, versus 422 and 47 in 2001–2009, respectively.

The main spider families treated here (Table 1) are represented in 2009 by 10 or more species. Linyphiidae show the highest diversity, as usual. Gnaphosidae and Salticidae share the second and third places (vice versa in 2000, but the same in 1996 and 1989, see Mikhailov, 2002).

An analysis of the spider fauna of the post-Soviet republics (Table 2) reveals almost the same patterns as earlier: Russia supports the highest diversity (2,297 species), followed by Ukraine, Kazakhstan, and Azerbaijan (958, 847, and 644 species, respectively). The spider faunas of Moldova and Armenia are still insufficiently well studied. In Lithuania, more than 100 species have been recorded since 2000, the fauna having become similar to the Latvian one in species richness. The main increase in species in 2000–2009 concerns Russia (+323 species), Ukraine (+128), Kazakhstan (+128), Lithuania (+121), and Azerbaijan (+85), but not Georgia or Kyrgyzstan, as noted for 1996–2000 [Mikhailov, 2002]. Only small changes can be documented for Estonia, Latvia, Byelorussia, Moldova, Georgia, Armenia, and Middle (= Central) Asian republics. As compared to 1996–2000, in 2001–2009 the activities of local arachnologists increased only in Russia, Lithuania, Ukraine and Azerbaijan (together with foreign specialists in the latter case). Most of the contributions to the spider fauna of Kazakhstan belong to foreign, non-Kazakhstan araneologists.

The division of the FSU territory into physiographical areas is accepted according to Gvozdetsky [1968] (Fig. 1).

The main increase during 2000–2009 is reported from the Russian Plain (V, +288 species, or 28.1% of the 2000 number), continental southern Far East (T1, +277 species, or 48.94%), Crimea (E1, +158 species, or 46.2%), Caucasus (E2, +106 species, or 12.71%), the mountains of South Siberia (P, +103 species, or 11.29%), West Siberia (M, +98 species, or 17.69%) (see Table 3). Crucial contributions have been made in

the continental southern Far East (Russia), yet mostly by extra-regional arachnologists, as opposed to the Crimea (Ukraine) which has been worked out by regional specialists. Earlier, during 1996–2000, the main progress was made in West Siberia (M, 29.91% of the 1996 number), Fennoscandia (B, 20.28%), the mountains of South Siberia (P, 12.18%), the Far East (T1, 11.64%).

Earlier evaluations of the total FSU spider fauna were at 2,700–3,000 species [Mikhailov, 1992], increased to 3,400–3,500 species [Mikhailov, 1997]. Current data allow me to increase the estimated number to 3,700–3,800 species in the FSU, including 2,500–2,600 species in Russia. Faunistic studies on the spiders of Russia and the FSU are still incomplete and go on.

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